

CLAIMS:

1. An electronic circuit for cryptographic processing, having a set of combinatorial logical circuits, the set of combinatorial logical circuits comprising a first combinatorial logical circuit, arranged to perform a first set of logical operations on input data and to produce output data, the output data having a functional relation to the input data,
5 characterized in that the set of combinatorial logical circuits further comprises at least a second combinatorial logical circuit, arranged to perform a second set of logical operations on the same input data and to produce output data, the output data having an identical functional relation to the input data,
wherein the first set of logical operations is different from the second set of logical
10 operations,
and wherein the electronic circuit is arranged to dynamically select one combinatorial logical circuit of the set of combinatorial logical circuits for performing logical operations on the input data and producing output data.
- 15 2. An electronic circuit according to claim 1, comprising at least a first set of combinatorial logical circuits and a second set of combinatorial logical circuits, and arranged to use output data produced by the first set of combinatorial logical circuits as input data of the second set of combinatorial logical circuits.
- 20 3. An electronic circuit according to claim 1, further comprising:
 - a selection circuit arranged for generating a signal to select one combinatorial logical circuit of the set of combinatorial logical circuits,
 - a splitter circuit arranged for inputting the input data to one combinatorial logical circuit of the set of combinatorial logical circuits, depending on the signal,
 - 25 - a merger circuit arranged for outputting the output data from one combinatorial logical circuit of the set of combinatorial logical circuits, depending on the signal.

4. An electronic circuit according to claim 3, further comprising a timing circuit arranged to determine the points in time at which the selection circuit generates the signal to select one combinatorial logical circuit of the set of combinatorial logical circuits.
- 5 5. An electronic circuit for cryptographic processing, comprising:
- a combinatorial logical circuit arranged to perform logical operations on input data and to produce output data,
 - a storage element for storing output data produced by the combinatorial logical circuit,
- 10 characterized in that the electronic circuit further comprises a first set of an encoding means and a corresponding decoding means, arranged for encoding first output data before storing the first output data in the storage element and decoding the first output data after retrieving the first output data from the storage element, respectively,
- 15 and wherein the electronic circuit is arranged to dynamically control the activation of the first set of an encoding means and a corresponding decoding means.
6. An electronic circuit according to claim 5, further comprising a second set of an encoding means and a corresponding decoding means, arranged for encoding second output data before storing the second output data in the storage element and decoding the
- 20 second output data after retrieving the second output data from the storage element, respectively,
- wherein the encoding of the first output data is different from the encoding of the second output data,
- and wherein the electronic circuit is further arranged to dynamically select one set of an
- 25 encoding means and a corresponding decoding means, of a set comprising at least the first set of an encoding means and a corresponding decoding means and the second set of an encoding means and a corresponding decoding means, for encoding and decoding of the output data.
- 30 7. An electronic circuit according to claim 6, further comprising a timing circuit arranged to determine the points in time at which the electronic circuit selects one set of an encoding means and a corresponding decoding means, of a set comprising at least the first set of an encoding means and a corresponding decoding means and the second set of an encoding means and a corresponding decoding means.

8. An electronic circuit according to claim 5, wherein the combinatorial logical circuit comprises a first combinatorial logical circuit and at least a second combinatorial logical circuit,
- 5 the first combinatorial logical circuit arranged to perform a first set of logical operations on input data and to produce output data, the output data having a functional relation to the input data,
- the second combinatorial logical circuit arranged to perform a second set of logical operations on the same input data and to produce output data, the output data having an
- 10 identical functional relation to the input data,
- wherein the first set of logical operations is different from the second set of logical operations,
- and wherein the electronic circuit is arranged to dynamically select one combinatorial logical circuit, of a set comprising at least the first combinatorial logical circuit and the second
- 15 combinatorial logical circuit, for performing logical operations on the input data and producing output data.
9. A method of processing cryptographic data, comprising:
- using a first set of logical operations for processing input data and producing
- 20 output data, the output data having a functional relation to the input data, characterized in that the method further comprises:
- using a second set of logical operations for processing the same input data and producing output data, the output data having an identical functional relation to the input data, wherein the first set of logical operations is different from the second set of logical
- 25 operations,
- dynamically selecting a set of logical operations, of a set comprising at least the first set of logical operations and the second set of logical operations, for processing the input data.
- 30 10. A method of processing cryptographic data, comprising:
- using a set of logical operations for processing input data and producing output data,
- storing the output data in a storage element,
- characterized in that the method further comprises:

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- encoding the output data before storing the output data in the storage element,
- decoding the encoded output data after retrieving from the storage element,
- dynamically controlling the encoding and corresponding decoding of the output data.

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11. A cryptographic device comprising an electronic circuit according to claim 1 or claim 5.